

What is claimed is:

1. An image-sensing device comprising:

a plurality of pixels that generate an electric signal proportional to an amount of incident light and then output the electric signal as an analog signal that  
5 is natural-logarithmically proportional to the amount of incident light; and

a level adjuster that adjusts a level of the electric signal output from the pixels by adjusting according to the electric signal output from the pixels a bias voltage fed to the pixels.

10 2. An image-sensing device as claimed in claim 1,

wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

3. An image-sensing device as claimed in claim 1,

15 wherein the pixels each comprise:

a photosensitive element receiving at a first electrode thereof a direct-current voltage;

a transistor having a first electrode, a second electrode, and a control electrode, the transistor having the first and control electrodes thereof connected to  
20 a second electrode of the photosensitive element so that electric charge output from the photosensitive element flows into the transistor, the transistor receiving at the second electrode thereof a direct-current voltage so that the transistor operates in a subthreshold region,

wherein the level adjuster adjusts the level of the electric signal output from

the pixels by adjusting the direct-current voltage applied to the second electrode of the transistor.

4. An image-sensing device as claimed in claim 3,

5 wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

5. An image-sensing device as claimed in claim 3,

10 wherein the level adjuster produces the direct-current voltage applied to the second electrode of the transistor by subtracting from a predetermined voltage a voltage according to the electric signal output from a plurality of pixels.

6. An image-sensing device as claimed in claim 5,

15 wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

7. An image-sensing device as claimed in claim 5,

wherein the level adjuster comprises:

20 an integrator circuit for integrating the voltage according to the electric signal output from the plurality of pixels; and

a subtracting circuit for subtracting from the predetermined voltage the voltage integrated by the integrator circuit,

wherein a voltage output from the subtracting circuit is fed to the second electrode of the transistor.

8. An image-sensing device as claimed in claim 7,

wherein the level adjuster further comprises:

a holding circuit for holding the voltage output from the subtracting circuit;

5 and

a switch connected between the subtracting circuit and the holding circuit.

9. An image-sensing device as claimed in claim 8,

wherein the pixels are arranged in a matrix so as to form an area sensor as a

10 whole.

10. An image-sensing device as claimed in claim 1,

wherein the pixels each comprise:

a photosensitive element receiving at a second electrode thereof a direct-

15 current voltage;

a transistor having a first electrode, a second electrode, and a control  
electrode, the transistor having the second electrode thereof connected to a first  
electrode of the photosensitive element so that electric charge output from the  
photosensitive element flows into the transistor, the transistor receiving at the first  
20 and control electrodes thereof direct-current voltages individually so that the  
transistor operates in a subthreshold region,

wherein the level adjuster adjusts the level of the electric signal output from  
the pixels by adjusting the direct-current voltage applied to the control electrode of  
the transistor.

11. An image-sensing device as claimed in claim 10,  
wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

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12. An image-sensing device as claimed in claim 10,  
wherein the level adjuster produces the direct-current voltage applied to the control electrode of the transistor by subtracting from a predetermined voltage a voltage according to the electric signal output from a plurality of pixels.

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13. An image-sensing device as claimed in claim 12,  
wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

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14. An image-sensing device as claimed in claim 12,  
wherein the level adjuster comprises:  
an integrator circuit for integrating the voltage according to the electric signal output from the plurality of pixels; and  
a subtracting circuit for subtracting from the predetermined voltage the  
20 voltage integrated by the integrator circuit,  
wherein a voltage output from the subtracting circuit is fed to the control electrode of the transistor.

15. An image-sensing device as claimed in claim 14,

wherein the level adjuster further comprises:

a holding circuit for holding the voltage output from the subtracting circuit;

and

a switch connected between the subtracting circuit and the holding circuit.

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16. An image-sensing device as claimed in claim 15,

wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.